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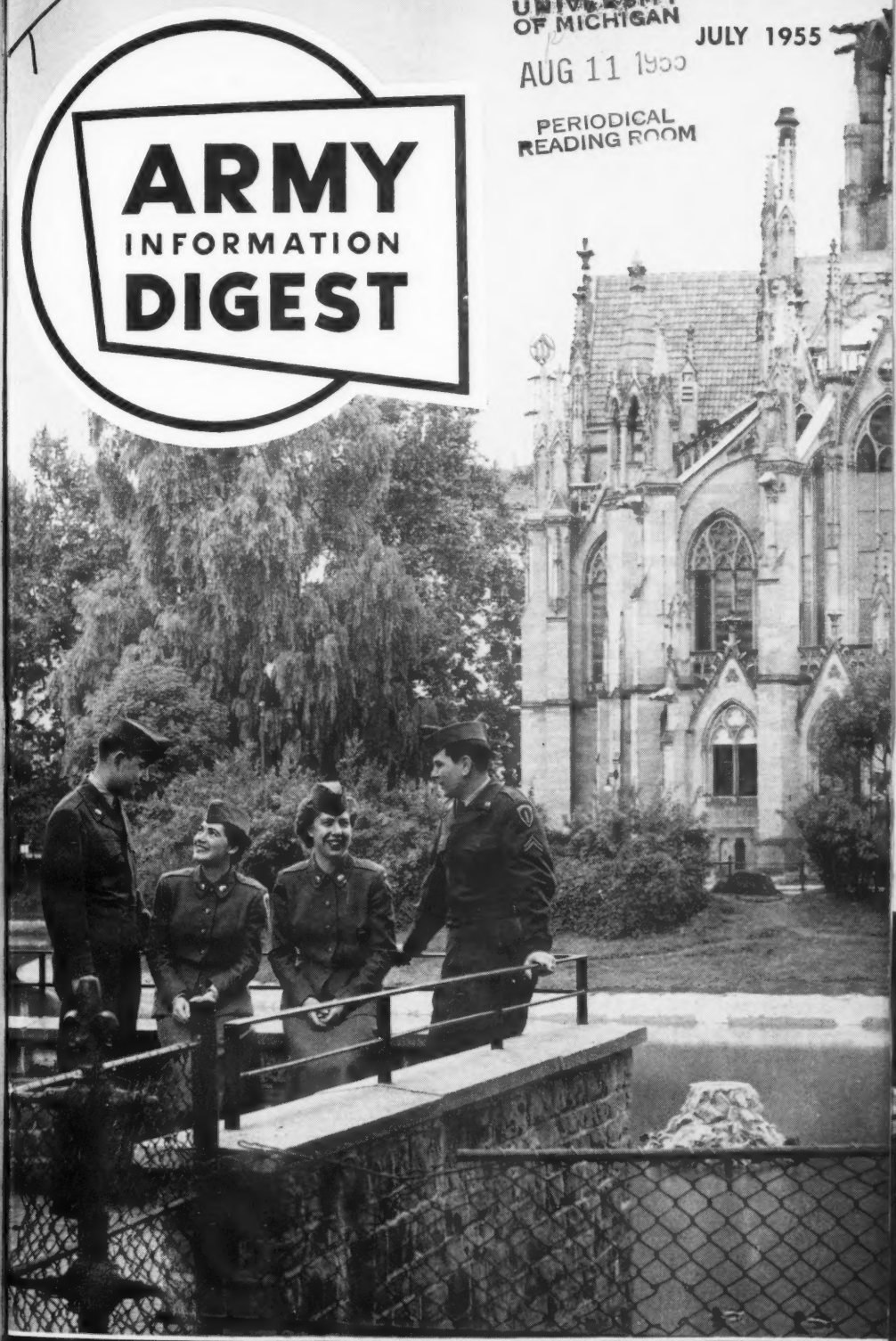

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ARMY INFORMATION DIGEST

OFFICIAL MONTHLY MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

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SOLDIERS in the United States Army Europe (USAREUR) Command have the unique opportunity of serving their Nation while simultaneously bettering themselves. On duty, there is the challenging mission of maintaining the defense posture of the West. Off duty, there are vast and varied facilities for self-improvement—foreign language classes, education centers, a Command-wide athletic and sports program, visits to cathedrals, museums and art galleries in Europe's many cultural centers. On the front cover of this issue, a foursome is shown enjoying a local tour which features a visit to the historic Johannas Church at Stuttgart, Germany.

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Tour of Duty i

First Lieuten mu

ONE DECADE of world history has passed since the United States Army assumed its responsibility for the military occupation of one-fourth of Germany, comprising 18,000,000 of its people and 42,000 square miles of its territory.

Since 12 May 1945—the date the Joint Chiefs of Staff approved JCS 1067/8, the directive which defined U. S. policy for the occupation of Germany—American Army responsibility has gradually been transformed from a mission of control and preservation of law and order to one of defense of the West, and preservation of peace in the heart of Europe.

This mission encompasses United States participation in the actual defense of Western Germany, in conjunction with France, Great Britain, and West Germany. It is designed to deter aggression from any direction in what has appropriately been termed the outpost of freedom in Europe.

The Army in Europe today represents a force of "organized readiness". Troops making up the United States Army, Europe (USAREUR) Command physically stretch across three nations—Germany, France, and England—with the bulk on duty in Germany. The Seventh Army is the principal U. S. Army tactical unit in Germany.

The individual Army commands in Germany which have carried the Army's mission and responsibilities through a decade in Europe have ranged from ETOUSA through USFET, EUCOM and the present-

The famed I. G. Farben Building at Frankfurt, former headquarters of European Command, now houses headquarters of V Corps and Northern Area Command.

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day USAREUR. Generals Eisenhower, Patton, McNarney, Clay, Huebner, Handy, Eddy, Bolte and Hoge have directed the individual commands that have evolved into the one headed today by General A. C. McAuliffe, who commanded the 101st Airborne Division at Bastogne, and more recently the Seventh Army.

WHEN United States troops assumed their duties of administering and controlling the American area in the quartered German nation in 1945, it was envisioned they would carry out their occupation role and eventually close the books and go home.

However changing political events in the post-war world and absorption of Eastern Europe by Communist infiltration and pressure have altered that plan. Eventually American forces in Germany were confronted with the problem of transforming themselves from a control and occupying force into one of defense and frontier preparedness.

United States troops line up the sights of their jeep-mounted 105-mm. recoilless rifle during maneuvers in the Grunewald Forest in West Berlin.

The outbreak of the Korean conflict in mid-1950 pointed up the need for bolstering combat forces in Europe. By December 1950 the Seventh U. S. Army was activated in Germany as a field Army. Within twelve months two Corps had been assigned to Seventh Army, and three infantry and one armored divisions had been added, bringing U. S. Army numerical strength in Germany to its present-day total.

AS PART of the Army forces buildup in Western Europe, USAREUR has conducted a series of troop maneuvers and exercises designed to test the combat readiness and training of troops. Such operations have served to familiarize units with new-type weapons such as the 280-mm. cannon, the Honest John, the Corporal and Skysweeper, and with atomic warfare techniques.

Throughout its training program, USAREUR has placed the accent on maximum realism commensurate with safety. This policy is based on the truism—as a man is trained, so will he fight.

One of the early Army maneuvers held early in 1949 was Snowdrop, a large-scale winter training exercise. A few months later a joint exercise with 70,000 troops participating served as a test run for later major combined operations. The following September, 110,000 troops maneuvered along with U. S. Navy, Air Force, and Allied ground units.

Two exercises were held during 1950, with emphasis on correcting weaknesses uncovered in previous operations. In late 1951 Exercise Combine, involving 160,000 troops, rounded out a series of smaller unit training maneuvers and command post exercises, each geared to serve as a realistic training operation.

In 1952 U. S. troops joined other NATO nations and participated in Exercise Rosebush with some 75,000 French and American troops involved. Two exercises, Main Brace and Equinox, followed soon, with the latter involving about 100,000 U. S. and Allied troops.

Monte Carlo—the main 1953 exercise—was the largest up to that time, with 175,000 United States, French, British, and Belgian troops in tactical training.

Two operations of Corps strength, West Wind and Indian Summer, were the main U. S. Army maneuver activities during 1954. Seventh Army units with some of their 280-mm. cannon participated in the British Army exercise Battle Royal, held in North Germany last September. The big guns also participated in the earlier American exercises.

One of the command's great accomplishments—perhaps the most significant up through 1954—was the development of a powerful atomic-weapon supported combat-ready force in Germany after an almost complete disappearance of a formidable army through redeployment. General William M. Hoge, until recently USAREUR commanding general, described the Seventh Army as "The greatest Army the United States has ever had in peacetime, by far the greatest."

Today General McAuliffe, as Commanding General of USAREUR and of Central Army Group—the latter consisting of the U. S. Seventh and First French Armies—finds himself responsible for assuring that the two field armies operate together cohesively as an inter-allied team, and that the U. S. Armed Services in Germany are properly coordinated.

River crossing problems are part of field maneuvers. Here a medium tank is loaded on an M-2 Treadway bridge on the Rhine River.

POSTWAR HIGHLIGHTS

THE RECORD of Army accomplishments in the European Theater since 1945 begins with establishment of occupation duties, and the redeployment of three million troops out of Europe to the United States or the Far East in eight months.

In early 1946 the Seventh Army was inactivated, and occupation control reverted to the Third Army and U. S. Constabulary. Those units handled such problems as Displaced Persons control, administration of thousands of German prisoners, border and area security, and tactical readiness against any threat to the peace or occupation rule.

A new training program for troops in Germany was established in late 1946, and eventually the huge Grafenwohr area, a former *Wehrmacht* tank maneuver center, was assigned for Army training and troop exercises. The last POW cage was closed out in 1947, and late that year the fortifications demolition program was completed.

The Army handled all phases of security involved in the momentous German currency reform in the U. S. Zone, and relinquished its security operations on the Rhine River to the U. S. Navy.

The U. S. Army Airlift Support Command, which functioned during the Berlin Airlift in conjunction with the Air Force, was phased out in late 1949 after more than a year's operation. In 1950 the Army began support of the Mutual Defense Assistance Program in Europe, of the U. S. High Commissioner's mission, and of six Military Assistance Advisory Groups established in Europe.

TROOP augmentation was stepped up, and special troops and vital supply depots were moved west of the Rhine for better tactical-logistical alignment. The Army's new Communications Zone was established in France in early 1951. By that time United States troops had set up depots, dumps and training sites in large areas in the French Occupation Zone in the Palatinate west of the Rhine.

Each operation fell into its proper pattern when the Army's new COM-Z line of supply came into being in mid-1951. Supplies could now be landed at French ports and shipped through France as the primary supply routes. This action relieved the pressure that existed on the Bremerhaven supply line, which placed the Army's lifeline perilously close to the Iron Curtain.

Derequisitioning of German property had been accomplished to such an extent that by the end of 1951 the West German Government announced that less than one percent of dwellings in the U. S. Zone were under requisition by U. S. Forces. This accomplishment was in line with the Army's policy to hold its intrusion into the normal German life to a minimum.

COINCIDENT with the derequisitioning policy, a vast housing construction program for Army families was initiated in 1950. Already more than 20,000 family units have been constructed in major military areas. Final construction phases are still underway or projected throughout former USAREUR military posts.

In December 1952 these posts were consolidated into the follow-

ing area commands: Headquarters, Western, Northern, Southern, Bremerhaven, and Berlin, with the Communications Zone in France becoming a major subordinate command.

The U. S. Army earned the praise and respect of Europeans for its aid to the Dutch people during the devastating Holland floods in early 1953. Thousands of soldiers from scores of units worked day and night in rescue operations, repairing dikes, rescuing livestock, and providing food and pure water for thousands of homeless victims in Europe's most devastating flood in generations. This action was repeated in Bavaria when the Danube and its tributaries overflowed during the fall of 1954.

EARLY in 1946, the U. S. Constabulary was organized from units of the inactivated Seventh Army. Crack Constabulary units functioned in the 1st and 2d Military Districts, into which the U. S. Zone had been divided, as three brigades of three regiments, plus special troops.

When the system of military posts was introduced in early 1947, post commanders became responsible for general area security. German border guards took over the former Constabulary border security duties, and the "Lightning Bolt" units became tactical.

Major security and tactical readiness requirements were handled by the Constabulary until reactivation of Seventh Army at Stuttgart in late 1950. All major Army tactical units were assigned to the new USAREUR unit, including the 1st Infantry Division and all Constabulary units.

BY THE end of 1951 the Seventh Army had grown to two Corps, five divisions, and supporting units. In terms of conventional military strength, it consists today of four infantry and one armored divisions, three armored cavalry regiments, one antiaircraft brigade, and considerable supporting artillery, and engineer and tank units.

However, Seventh Army firepower potential has been magnified by the USAREUR new weapons augmentation program—through addition of five battalions of the 280-mm. cannon, several batteries of Honest John artillery rockets, and units of the new guided missile weapon, the Corporal.

The men of USAREUR who direct and man these firepower elements are convinced they have the power punch that will enable the U. S. Army to meet head-on any threat to the peace which has lasted through a cold-war decade in postwar Europe.

EDUCATION IN USAREUR

FROM Ankara, Turkey, to Heidelberg, Germany, and in 121 other cities in Europe, the midnight oil is burning brighter than ever for American Army members studying at night to complete their high school education, or gain credits toward a college degree.

This thirst for knowledge covers the subject gamut from European languages to electrical engineering, and from "The Diplomatic History of Europe Since 1871" to English composition. Classrooms range from a barracks in France to a castle wing in Munich.

The program in Europe is threefold. All over the Command, Army Education Centers sponsor group

A 280-mm. cannon capable of firing atomic artillery shells awaits a fire mission during field exercises in Germany.

study classes from grade school to college level during duty and off-duty hours. Under the United States Armed Forces Institute (USAFI) military personnel may take self-teaching courses for a one-time fee of only two dollars. In addition, the University of Maryland off-campus program offers college courses off-duty in over two hundred cities in Europe.

No matter what level of education the soldier in Europe has reached, he has the chance to increase his knowledge and advance the level of his formal schooling. In the twelve month period ending September 1954, for example, USAREUR troops took 83,541 tests and completed 40,235 courses. A total of 4,075 persons enrolled in University of Maryland classes and 15,463 in USAFI courses.

Some 14,477 earned fourth and fifth grade certificates, and 3,057 earned eighth grade certificates. In all, 5,027 General Education Development certificates were issued as the result of examinations on the high school level, and 882 on the first year college level.

THE ARMY in Europe currently operates 140 education centers in Germany, France and England. These are set up to facilitate group study classes, examinations, educational advisement, and participation in USAFI and University of Maryland courses. Their classrooms, work shops, assembly halls, libraries, and advisement offices are open days and evenings for soldiers interested in furthering their education.

Every military installation having a troop population of a thousand or more is required to maintain an education center, and almost any academic or vocational course can be arranged if ten or more soldiers enroll. In Europe most group study classes are in fundamental English and mathematics, spoken German, spoken French, typing, and other introductory subjects which are directly related to Military Occupational Specialties and unit mission.

CURRENTLY the most popular courses are conversational classes in French and German. Servicemen taking these courses have the added advantage of learning a foreign language under the most favorable conditions, with native instructors and in daily association with the German or French people.

The Army in Europe employs 650 instructors, including full-time United States and Allied civilian personnel, faculty members from nearby schools and colleges, and Army personnel assigned as part time instructors.

Enrollment in USAREUR group study classes jumped from 1,500 in 1947 to 108,000 in 1954. In response to soldier interest, more than 5,700 different classes, mostly during off-duty time, were organized in education centers last year.

RECREATION

FOR servicemen and women stationed in Germany, France, or Austria, recreation through USAREUR facilities is high on the list of things to write home about. A well-rounded program includes everything from skiing at Army-operated Alpine resorts, to appearance in community theater projects.

Unique phases of the Army's recreational program in Europe are its facilities and hotels at Garmisch,

Chiemsee, and Berchtesgaden, in Germany's finest Alpine resort areas. Thousands of soldiers, Wacs, and their families from all over Western Europe visit the resorts annually.

In winter there is skiing, bobsledding, and skating; in spring, summer, and fall, golf, swimming, hiking, mountain climbing, river boating, and sightseeing. Sports equipment is provided at a small rental. The Army-operated hotels and facilities are also on a self-supporting basis, with charges based on actual operating costs.

Sports-minded soldiers throughout the Command can take part in a company and regimental-level program which includes softball, football, touch football, basketball, track and field, boxing, skiing, tennis, golf, bowling, swimming, diving, and fencing. The Special Activities Division, USAREUR, supervises command-wide sports activities. (See "A Sports Program for the Army in Europe," August 1954 DIGEST.)

DURING 1954 more than 100,000 soldiers were registered in sports events leading to tournament or championship playoffs. Additional thousands of service personnel participated in local and unit sports programs. Sports fields and gymnasiums are provided at all installations.

Many units have developed German-American and French-American sports programs, mostly devoted to track and field. These Army and local sports clubs usually conduct tournaments to support charitable fund-raising programs.

Each year the winners of USAREUR track and field championships, boxing matches and basketball tournaments are selected to participate in the 19-nation sponsored CISM *(Conseil International du Sport Militaire)* games held throughout Europe.

THIS YEAR Egypt will sponsor the basketball tournament, Belgium will play host at the swimming and diving meets, and Greece will sponsor the track meet. CISM boxing matches will be held in Germany under auspices of the United States Armed Forces, and the military pentathlon events will be held in Sweden.

Five years ago the men of the 14th Armored Cavalry Regiment stationed near Bad Hersfeld, Germany, joined the local German sports club in a track and field meet. The precedent has already developed into a tradition. Today the Bad Hersfeld international sports day draws not only American and German teams from the immediate area, but also British and French athletic teams from allied forces in Germany, making it a truly international event.

Bowling is one of the most popular year-around activities. During 1954 more than 1,300,000 lines were bowled by USAREUR troops in league competitions.

AMERICAN attendance at more than 500 theaters operated by the Army's European Motion Picture Service in Germany, France, and Austria, topped the 22,000,000 mark last year.

Special Services enlisted men's clubs are provided at all military installations in Europe. They serve as the soldier's "living room", and meet many of his everyday recreational needs. Activities there in-

A WAC corporal and her Seventh Army escort admire King Ludwig's personal carriage displayed in the Deutsches Museum, Munich.

clude dances, bingo games, coffee hours, jam sessions, variety shows, community theater, and many others. In addition the clubs provide music rooms, ping-pong tables, handicraft shops, and the like.

Any night or day the American Army members in Europe have every opportunity for recreation in Army-sponsored facilities, whether it is a show, a few games of ping-pong, boxing, acting, listening to music, sightseeing, or just plain sitting and reading or thinking in an overstuffed chair in the service club lounge.

CULTURAL ASPECTS

FEW other United States oversea commands offer Army troops such an abundance of history and culture as the Army's Command in Europe. Nowhere else are there so many and convenient opportunities to study and enjoy at first-hand the heritage which is so closely interwoven with the American scene.

Servicemen stationed here show not only an interest in the monuments and show pieces of France and Germany, but many also make a sincere effort to know the people, learn their language, and understand their way of life.

During the past Christmas season hundreds of soldiers were invited into homes of German families. On Sundays soldiers of all faiths frequently attend local church services.

American soldiers are among the most enthusiastic participants in such German national traditions as the *Oktoberfest* and the *Fasching* celebrations.

MEMENTOS of ancient as well as recent history are found almost

A University of Heidelberg anthropologist describes features of the 200,000-year-old jaw bone of Heidelberg Man to two servicemen.

at the doorsteps of many installations where American troops are billeted. The *Bindlach Kaserne* at Bayreuth, Germany, occupied by Seventh Army troops, looks down from a hilltop onto the magnificent *Festspielhaus* where world-famous opera stars and musicians gather each year to pay homage to one of Germany's great composers, Richard Wagner.

Men of the 2d Armored Division's 12th Armored Infantry Battalion in Worms, Germany, view Lutherplatz with its statuary commemorating Martin Luther. It was also here that Emperor Maximilian proclaimed the "eternal peace" at the Diet of 1495.

In Munich, buildings once identified with the rise and rule of Nazi Germany now house Army installations. An officers' club occupies the major portion of the Haus Der Kunst, one of Germany's leading pre-war art museums. An enlisted men's service club is housed in the Burgerbraukeller, scene of Hitler's unsuccessful *putsch*. The State Department-sponsored Amerika Haus is in the building where Hitler, Mussolini, Daladier, and Chamberlain met in 1938, and signed the agreement that was to guarantee "peace in our time".

In Metz, France, American troops are quartered in ancient garrison *kasernes* which have housed successive generations of French troops who fought through three wars in less than a century. Not far away is one of the world's great wine-producing areas, the Bordeaux country, where Army supply and service units are stationed.

In Heidelberg, headquarters for U. S. Army, Europe, many American service personnel tour the ruined Heidelberg Schloss (castle), destroyed by the French in the 17th

century. Soldiers and Wacs stroll along the Neckar River, visit inns dating back centuries, and acquaint themselves with philosopher Goethe, the story behind the operetta "The Student Prince," and Heidelberg University, oldest in Germany.

Berlin's many historic national shrines and familiar landmarks like Unter den Linden and the Olympic Stadium attract thousands.

USAREUR Special Services makes available scores of local scenic and historic tours throughout the year. On weekends, tours are conducted to Strasbourg in France, Salzburg in Austria, or Basel in Switzerland. Other tours go to Lindenhof and Neuschwanstein castles, built by mad King Ludwig II of Bavaria, to the Passion Playhouse at Oberammergau, and to historic German cities like Nuremberg, Rothenberg, and Braunfels.

Germany, where most American troops are located, is the land of Schiller, Holbein, and Kant, of Einstein, Beethoven, and Durer. The Johann Gutenberg press is on display at Mainz; Army tours stop there frequently to permit a view of the famous invention, while enroute to the communities of Trier and Cologne, which date back to Roman times.

LEGENDARY castles on the Rhine are at every turn as the famous river curves its way through the Rheingau vineyard country. The old Mouse Tower near Bingen, and the Lorelei Rock nearby, have been photographed by thousands of Americans during their river or motor tours through the "Watch On the Rhine" country.

Salzburg, the city of Mozart with its famous Mozart museum, is one of the many cultural and historic shrines in Austria visited by servicemen. Many travel into the colorful Carinthian countryside of south Austria, and study Alpine customs and legends in Tyrol.

The storied Black Forest, edging down to the Swiss border, attracts those familiar with its prominence in German culture, customs, and artistry, and as the home of the cuckoo clock.

TRAVEL OPPORTUNITIES

WHEN furloughs permit, the USAREUR soldier can see much of Europe and parts of the Middle East and Africa. European travel agencies have tailored the prices of many of their tours to suit the average soldier's pocketbook. In addition, Army-operated tour offices have been established by the Leave Activities Section, Special Activities Division, USAREUR.

To assure that the soldier tourist's dollar is well spent, all tours offered by travel agencies through the Army-operated tour offices are carefully checked by the Section. In 1954 more than 36,000 tours were booked.

Travel costs are low and the opportunities varied. For example, a ten-day tour of Yugoslavia, including Belgrade and the Yugoslavian riviera, can be had for $130 complete. The tour also includes Sarajevo, where the shot that started World War I was fired.

A SOLDIER with a two-week furlough and about $180 can take one of several cruises around the Eastern Mediterranean. Ports of

Yachting on a lake in the Bavarian Alps, these servicemen head toward the Eibsee Hotel where vacationing American troops are billeted.

call include Cairo, Port Said, Cyprus, Istanbul and Crete.

The world-famous winter resorts of Switzerland can be visited on a three-day pass for as low as $30 to $40, including transportation, food and lodging.

On his own, a soldier can spend $100 for a weekend in Paris, but with an organized tour he can see the follies, ballet, nightclubs, palaces, and museums for as low as $40, including billeting and travel to and from Paris.

Norwegian fjords take only a week and about $150. Spain with its bullfights, castles, and interesting cuisine, can be toured in a week for about $100 including transportation, lodging, and food.

The foregoing prices are only a sample of the many low-priced tours available to USAREUR service personnel. There are train, plane, bus, boat, auto, bicycle, and hiking tours available to almost any part of Europe.

On pass or leave, USAREUR personnel are only hours away from such world renowned points as Parliament in London, the Eiffel Tower, and Notre Dame in Paris, the William Tell country in Switzerland, and Canterbury and Saint Albans cathedrals in England.

Saint Marks in Venice, Saint Stephens in Vienna, and Saint Peter's in Rome have attracted thousands of Americans in uniform. Paris has its cultural as well as its gay side for Americans, and its museums are meccas for curious and interested Army spectators, with or without cameras.

EVERY DAY thousands of Army members travel to places that once were only names on maps, or cities and countries mentioned in history and geography books. The names of Europe's great cities and resort areas from the Canary Islands to Istanbul and from Cairo to Edinburgh are a common part of everyday Army conversation in Europe today.

Next month Mrs. Smith of Altoona will get a card from her son in Rome and Mrs. Jones of Santa Barbara will get a letter from her daughter in Paris. America's travel-conscious soldiers and Wacs are taking advantage of one of the biggest travel bargains in their lives.

While serving with USAREUR, thousands of uniformed Americans have studied and photographed scenic and cultural wonders in the various countries of Western Europe. At the same time they have gained an understanding and appreciation of their international neighbors as friends and allies in a common cause—the defense of the West and its cultural values against aggression from any source.

They Also Serve

Irving M. Moss

AS THE troop ship draws in to its berth in the Port of New York, families of returning soldiers cheer, laugh, cry. Eagerly they await the first sight of their returning loved one and they press forward to hasten the initial greeting as he comes down the gangplank.

In every crowd at the pier are some dozens of families who are reunited because of volunteer work on the part of a score or so members of the Officers' Wives Club of Fort Hamilton, who daily assist the small public information staff at the New York Port of Embarkation.

Many of the families never realize that it might have been the wife of the commanding general of the port, or his assistant or the chief of staff, who answered the telephone when they had called seeking information.

Often the families of soldiers hear from their soldier that he is "returning very soon" from his foreign assignment. Then no more

IRVING M. MOSS is Public Information Officer of New York Port of Embarkation.

word comes, often for several weeks. Letters they write are returned—sometimes a bundle of his personal belongings arrives—but no more word from the man himself.

Sometimes this occurs because many of the men expect a ship to be waiting for them when they arrive at the European POE and they never think to notify their families when there is a delay. Sometimes it may be because the man has a slight illness and is held until fully recovered. Sometimes his papers may have gone astray. Whatever the reason, hundreds of soldiers fail to notify their families and they in turn may become worried, then frantic.

THOSE seeking information from newspapers or Army installations in the region of the New York Port of Embarkation, are referred to the Public Information Division at the port. Because of the small staff available to handle the many calls, the Officers' Wives Club of Fort Hamilton for the past two years has assisted in the handling of nearly 175,000 telephone inquiries.

With the ending of World War II, a special section of about thirty military and civilian telephone clerks was set up at the Brooklyn Army Base to handle such calls. But following the Korean crisis funds were lacking for additional Civil Service personnel. Moreover, the volume of calls fluctuated, according to the sporadic arrival dates of transports. Still further, it would be difficult to find telephone clerks with sufficient maturity, patience, tact, and sympathy to cope with the large number of "problem calls".

When the Officers' Wives Club was apprised of the problem, their response was immediate and enthusiastic. Even so, there were some reservations all around. The Public Information Officer at NYPE, for one thing, considered the handling of the large number of telephone inquiries as an important public relations activity—would volunteers be able to handle it properly? The women themselves had some private doubts as to the need for their spending considerable time doing telephone clerk's work—was it that important?

TWO women reported on the first day of the trial run and in less than an hour the doubts on both sides were completely dissipated. The PIO quickly saw that the women—all of them wives who had gone through the ordeal of moving or waiting themselves—were ideally suited to the type of work. They could readily sympathize with the emotional state of most of the callers.

And the women were certain their work was needed. One of the ladies on that first shift, a colonel's wife, had listened for nearly twenty minutes to the tearful wife of an army private. She was about to have her first baby, the younger woman said; her mother was ill with a heart attack; her husband was due on emergency furlough but she had not heard from him since he left his camp in Germany.

A quick check with the American Red Cross representative at the Brooklyn Army Base revealed that the soldier would arrive next morning—but he had not notified his alarmed wife. Speedy processing and special transportation were arranged. Next morning he and his

wife were on their way home to Ohio by plane—all within an hour after the ship docked.

AFTER that first test the women have never stopped working. Now the Brooklyn Chapter of the American Red Cross officially recognizes the importance of the task, and grants Red Cross credits for the hours the women spend answering inquiries.

The public appreciates it, too. Many a father, happy over at last finding out about his son, insists on buying refreshments "for the house" and many an unsolicited gift comes in from women—mothers or wives. All are tactfully refused or returned.

Information about incoming ships is received through advance passenger lists. These usually come in about three days before a ship arrives. Lists are broken down by service, so it is always necessary to ask whether the inquiry is about a soldier, sailor, or airman. Sometimes, oddly enough, the callers aren't even sure of that! One woman knew her son wasn't in the Navy but wasn't sure whether he was in the Army or Air Force. A tactful question about color of his uniform established he was in the Air Force and the desired information was quickly supplied.

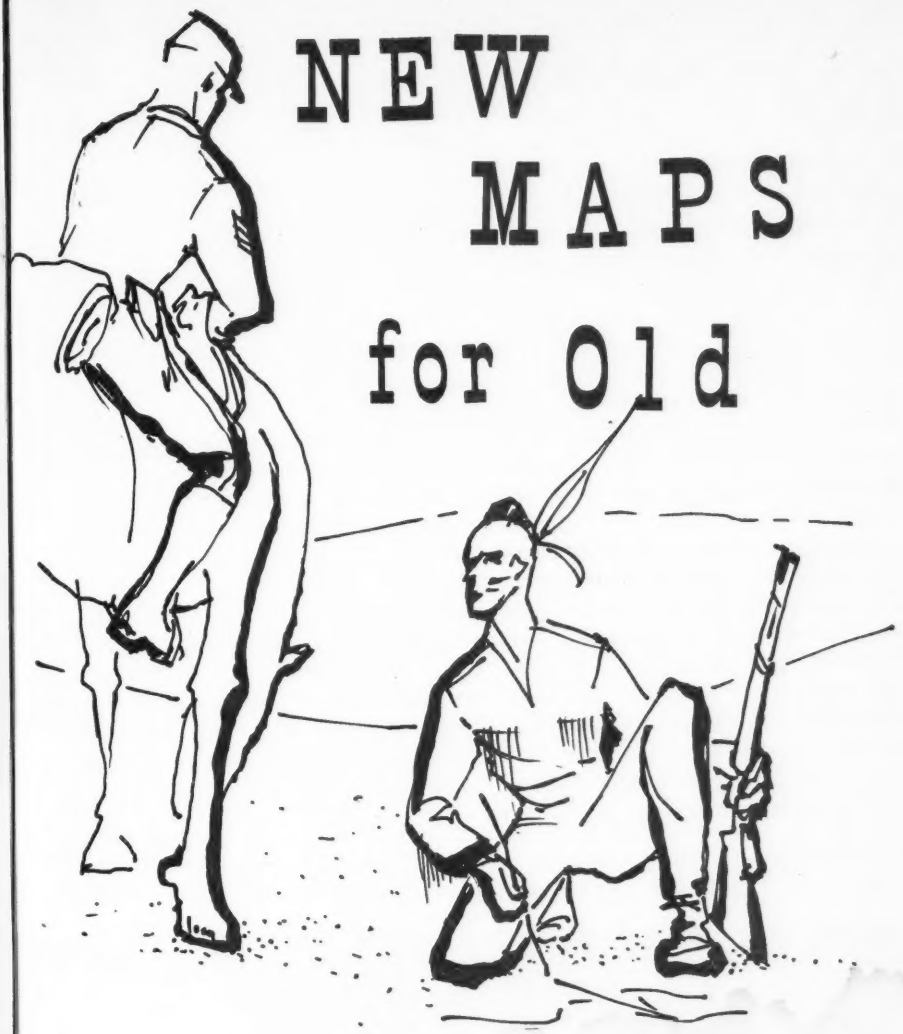
When it is impossible to supply the information, inquiries are referred to the Red Cross or to the proper departments in the various services which have their records.

ON BUSY days the phones ring incessantly. Before one can recover from the emotional strain of soothing the frayed nerves of one frantic caller, there is another to be handled tactfully and sympathetically. It is not unusual to hear the wife of a Regular Army general officer patiently explaining to the wife of a drafted private how to go about meeting him, what bus to take to get to the pier, and the like.

Army officers in recent decades have become increasingly aware that they are servants of the people. At the New York Port of Embarkation, their wives also are serving in that cause.

The Telephone Answering Service maintained by the New York Port of Embarkation has been deemed to be a public relations program of such outstanding nature that a special report concerning it will be included in the "Archives of Public Relations" maintained in the Library of Congress by the American Public Relations Association, it was recently announced.

NEW MAPS for Old



Colonel Julian D. Abell

IF NAPOLEON had possessed a modern military map, the battle of Waterloo might well have had a different outcome, for he could have noted the slight depression that concealed Wellington's infantry. As it was, not knowing the topography of the field, the French general sent his cavalry charging into a trap. Within a short time his army was routed and he himself was fleeing.

At many another critical juncture, a modern military map, showing contour lines and other features, might have changed the course of history. Grant at Vicksburg, for instance, allowed the Confederate forces to retreat down a road which, had he but known it, led

COLONEL JULIAN D. ABELL, Corps of Engineers, is Commanding Officer, Army Map Service.

them back to the city and prolonged the siege.

In Napoleon's time, and even in Grant's, maps of any sort were scarce. Today everybody uses them. The motorist planning a trip relies on the excellent free maps supplied at the nearest filling station. The statesman uses them in drawing up boundaries of nations. Flood control, navigation projects, water resources, transportation, electric power developments—practically every major undertaking affecting our lives in small or great detail, relies on maps.

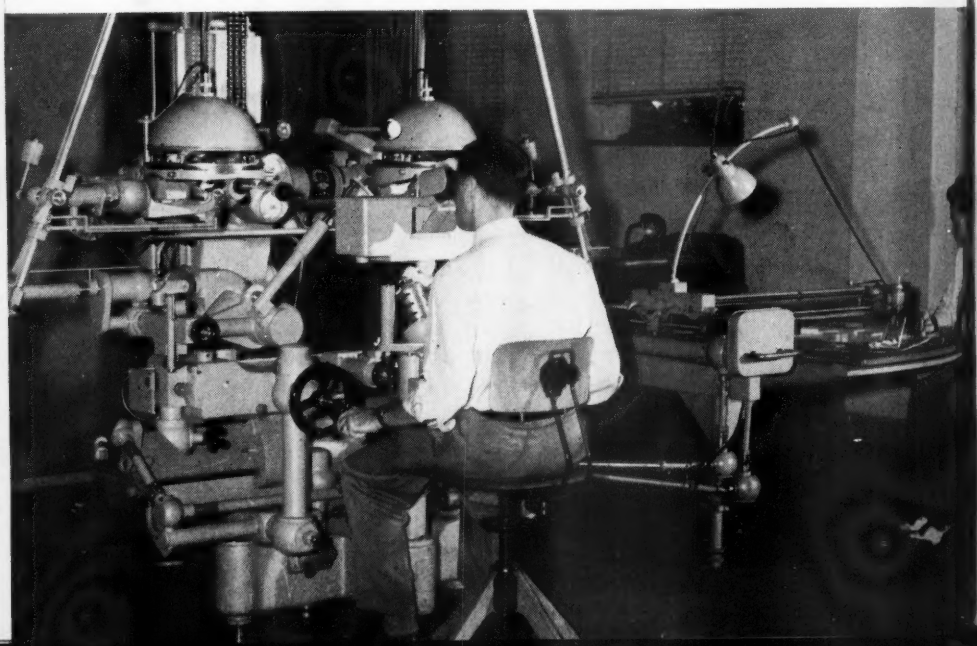
Men have of necessity been making maps for thousands of years. The untutored savage showed the way by drawing a sketch in sand or snow. It may have lacked scale and probably was not properly oriented with the cardinal directions but it served its purpose.

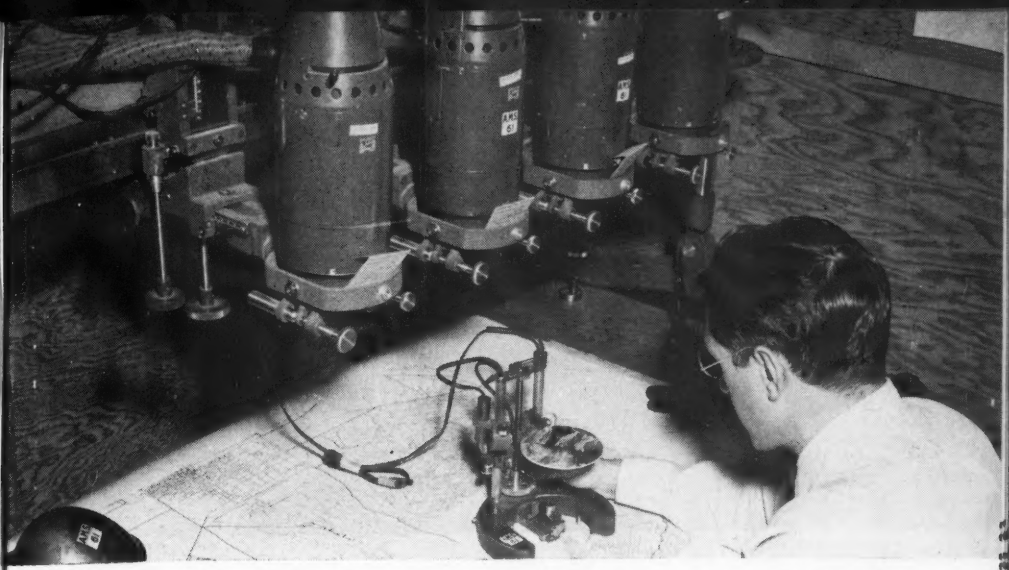
As civilization advanced, maps were reproduced by stylus on papyrus and then by woodcuts in printing. Early maps still lacked scale and were oriented in any way that suited the maker. The use of meridians and parallels was not introduced until the third century B.C.

EARLY maps attempted to show geographic features pictorially. A mountain or a town might be drawn in profile; the sea was depicted by elaborately drawn "waves" and spouting whales; legendary figures appeared. The results, although often beautiful, were far from accurate. Little was known of measurements; indeed, the early map maker had no instruments with which to make them.

Down through the ages, the primary purpose of a map has been the same as it is today—to show men how to get from one place to

Complex instruments are used in plotting topographic map detail. This is the stereoplanigraph and its auxiliary, the coordinatograph.





Compiling a modern military map with multiplex equipment—the most common method currently used—is shown here.

another. But to accomplish this, vast resources and knowledge are necessary.

Early explorers could chart the coast line but to procure accurate soundings of the waters required much more time and effort. Detailing the interior of large land masses demanded intricate surveys accomplished by many men at considerable cost. No single person, however talented or studious, could produce a good map of even a small area.

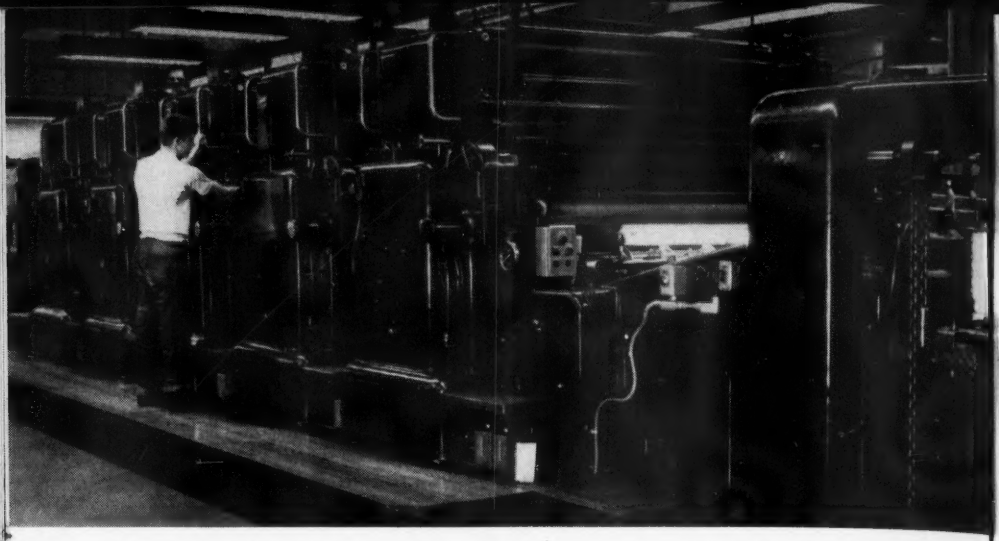
For these reasons the resources of governments had to be called upon. This movement began early in the nineteenth century and has continued to date. In the United States, the Army Map Service, Navy Hydrographic Office, and the Air Force Aeronautical Chart and Information Center all cooperate with other Government agencies in preparing maps and charts for military purposes.

TODAY accuracy has come to replace pictorial quality as the goal of the cartographer. Slow but certain progress in the development of instruments and techniques for establishing positions of the earth's surface and portraying these features in graphic form, marked the evolution of cartography into a modern science.

The cartographer has been hard pressed to keep pace with the demand for accurate geographic information. Rapid technological advances, especially during the past fifty years, have literally changed the face of the earth and with it, man's concept of its size.

Such changes have been accompanied by an increasing demand for an exact and current portrayal of the features of the earth. Military personnel in particular require more and better detail on their maps. And today the military unit must know locations, not only in the next valley or over the next hill, but on the other side of the ocean.

This need has placed stringent requirements on the modern cartographer. In order to meet them, he must be skilled in the use of



Maps are printed in five colors on this press, a recent addition to facilities at Army Map Service.

complicated instruments and techniques. He must perform surveys, both on the ground and in the air, prior to the preparation of any map in an effort to achieve the utmost accuracy. To supplement the original surveys, field checks must be made wherever possible at the completion of a military mapping project to verify the completeness and accuracy of the information portrayed on the map.

IN RECENT years, numerous interrelated sciences have contributed to the production of accurate maps. Geodesy, dealing with the shape and dimensions of the earth, plays an increasingly important role. More recently, electronics has joined the charting sciences. Its contributions range from computing machines such as Univac (for making geodetic calculations) to locating devices such as Shoran (short range electronic navigation). Radio, also, has added its bit by providing time signals for establishing longitudes.

Still another science that has been developed is that of photogrammetry, which makes reliable measurements by means of aerial photographs. This has revolutionized the speed and accuracy of map making.

Modern aviation helps procure invaluable information by means of aerial surveys. The helicopter has made possible terrain surveys in areas hitherto difficult or impossible to traverse. The most valuable service of aircraft, however, is the accomplishment of aerial photography, the basis of information for most modern maps.

Although of extreme value, aerial photographs alone cannot take the place of true maps, for such views do not show all details necessary to the military man. They are invaluable, however, as a supplement to available maps.

Since current mapping techniques were developed through utilization of aerial photography, symbolization of modern maps is based on a planned view of the earth's features from above. This is in direct contrast to the early maps which showed features from eye level—and therefore in profile.

To some extent, however, modern map makers have returned to a pictorial representation for conventional symbols. For example, they frequently use individual tree symbols for forests or orchards, and profile views for sand dunes.

DEVELOPMENT of mapping instruments has proceeded with the advances in the science of cartography. Early map makers relied upon such relatively simple instruments as compass, astrolabe, telescope, pendulum clock, sextant, octant, and quadrant. Today the cartographer utilizes such complex instruments as the multiplex, Kelsh plotter, stereoplanigraph, and automatic computers.

Great emphasis now is placed upon topographic mapping—that charting which portrays relief, or the configuration of the ground, in measurable form. Topographic maps provide a base for illustrating a variety of problems and information concerning human activities.

This field, of course, is of greatest import to the military. Various symbols are used to portray relief, most frequent and accurate of which are the contours, which appear on the maps as continuous lines connecting all points of the same elevation. Other methods include hill shading, altitude tints, form lines, and hachuring.

Since World War II a great step has been made in this area with development of the plastic relief map which provides a three-dimensional effect by printing a topographic map on molded plastic.

The significance of maps on the national and international scene is evidenced by recent activities directed toward standardization of mapping practice. In 1946 the Joint Mapping and Photographic Committee, composed of representatives of the United States Federal mapping agencies, undertook the standardization of topographic map symbols and specifications for use by the member agencies. They were later used as a basis for agreements on standardization between the United States, Great Britain, and Canada; and now they are serving as the foundation for similar agreements by NATO countries.

THE NATO program itself illustrates the vast importance of maps in international relations. One of the first steps of this collaborative venture called for supplying all of the allied countries with adequate maps. This effort involved printing of some 90 million maps—largest single project in the history of military map making. (See "The European Grid Conversion Program," August 1953 DIGEST.)

A second phase of this program —bringing existing maps up-to-date —has begun. NATO countries are now preparing international standards for symbols, scales, sheet lines, and terminology. This standardization will permit large savings in time and money.

Map making has thus progressed through the centuries from the rude sketch of the savage to the meticulously detailed, precisely oriented and scaled products of the cartographer's art so widely used today. The potentialities of military maps will be even further enhanced as new and improved scientific methods increase their accuracy and graphic qualities.

OUTSIDE—Slowly the snows creep up to cover the sinking culvert tunnels.

Going—Going—GONE

Beneath the Greenland Ice Cap

WHEN, after a winter's absence, the sun finally appeared above the horizon in Northern Greenland this spring, all that remained of a cluster of buildings that had been erected there three months earlier were three big towers resembling chimney tops.

United States airmen continued to live in this unique structure as it sank ever farther into the polar ice cap. The buildings were, indeed, expressly designed to be swallowed up by the packing action of the ice and snow.

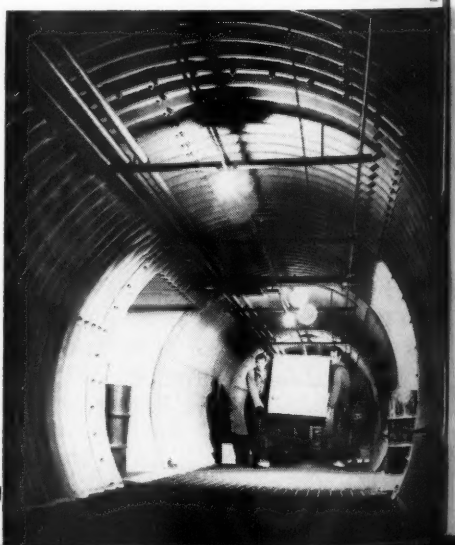
Built by the Army Corps of Engineers for the United States Air Force under terms of a Danish-United States defense agreement, the new installation is the first ever designed and built for continuous use on the Greenland ice cap.

ARMY Engineers of the East Ocean Division employed the submarine pressure-hull principle in the construction. Buildings are culvert-type steel tubes 18 feet in diameter and of varying lengths, hooked together at the ends with interconnecting passageways. The entire structure is balanced like a ship to go down into the snow on an even keel at the rate of several feet each year. Men and supplies move in and out through special hatches.

The "chimneys" are upright sections, like conning towers on a submarine. Through them air and supplies are taken in, and out of them go exhaust fumes from the diesel generators which supply heat and power. As the entire structure sinks, more sections are simply added to the hatch.

Inside the longitudinal tubes are quarters, mess hall, dispensary, recreation room, kitchen, and equipment for several score men. The heating system maintains an interior temperature of 72° although outside the temperature may range down to —75° F.

INSIDE—Airmen carry in supplies just dropped by aircraft from Thule.



The Corps of Engineers advances a new science of "Arcticology" as the Army moves toward

Conquering the Arctic

Lieutenant Colonel Arthur H. Lahlum

WHERE FOR COUNTLESS years the vast reaches of snow and ice-locked Arctic areas have been disturbed only by the barking of the Arctic fox or the howl of an occasional wolf, the grinding of ice against rocky shores, the honking of waterfowl, the advent of a few hunting Eskimos and a fewer number of explorers, today the eerie wail of jet bombers or the roar of propellored commercial planes is becoming common.

Today, too, the igloos of the Eskimos are being overshadowed by permanent military installations. Hundreds of thousands of square miles impenetrable to the dog-team explorer are being mapped by air. The unbroken wastes are being marked by "trains" of tractor-drawn sledges and by roads.

The hard and difficult facts of strategic necessity have now made the outer reaches of Alaska, Northern Canada, and upper Greenland of such prime importance that large numbers of men must be maintained there permanently.

The Arctic now is the pathway of civilian airlines as well. The great circle route from Los Angeles to Copenhagen no longer passes through New York City but through Winnipeg, Manitoba, and central Greenland. Not only is the Air Force directly affected by this fact, but the Army and Navy too are increasingly cognizant of the new role being played by the Arctic regions.

Today the inhospitable far reaches of the North American continent and of Greenland are being made to yield to the new science of "Arcticology," in which the basic skills and techniques of a dozen sciences ranging from glaciology to map making are employed.

DURING the past few years the public has heard in somewhat

LIEUTENANT COLONEL ARTHUR H. LAHLUM, Corps of Engineers, is Commanding Officer, First Engineer Arctic Task Force.

piecemeal fashion of some of the accomplishments that have resulted —construction of permanent air bases at Thule, building of radar stations, roads, and landing strips.

But few realize that the entire program is the result of an epic engineering effort—one of the greatest combined efforts by the military, American universities and private industry since the first atomic bomb was developed under the Corps of Engineers' Manhattan Project.

As a result, many of the most pressing difficulties of ice, snow, unstable terrain, high winds, and severe cold have been defeated—at least to the extent that the major engineering problems of military construction and operation in the Arctic have been solved or are headed for practical solution.

As Major General S. D. Sturgis, Jr., Chief of Engineers, has pointed out, the security of the United States and of all Western civilization may rest on the speed and efficiency with which this vital job has been and is being done.

Admittedly only military reasons have led the Army to undertake the gigantic task of unlocking the barren fastnesses of the far north. Yet the basic approach—of consolidating a dozen different sciences into an all inclusive Arcticology, comparable to the study of the sea in oceanography—will have a far-reaching bearing on many commercial and economic phases of civilian endeavor in the years to come.

ACCOMPLISHMENTS thus far are both practical and academic. In the realm of the concrete, which serve a present vital military function, are construction projects amounting to one and one-third billion dollars in Alaska, Canada, Greenland, and Iceland.

In Alaska a total of $600 million has been spent for expansion of facilities at Ladd, Eielson, and Elmendorf Air Force Bases and at Fort Richardson, Big Delta, and the Port of Whittier; for communication and aircraft warning systems; and for construction of a 621-mile pipeline from Haines to Fairbanks.

Greenland construction, set at $250 millions, includes new bases at Thule and expansion of bases at Sondrestromfjord and Narssarssuak on the Greenland west coast.

In Canada, construction valued at $300 millions includes building and expansion of existing bases at Goose Bay, Labrador, and Stephensville, Newfoundland, and construction of communication and aircraft warning systems.

In Iceland expansion of the base at Keflavik accounts for an additional $125 million.

IN THE scientific field, a vast knowledge of the Arctic has been gained through a combined study by physicists, civil, mechanical, electronic, and electrical engineers, cartographers, glaciologists, meteorologists, geologists, and photogrammetrists.

In their studies, they have tested and analyzed arctic rock, soil, ice, and snow. They have made extensive weather observations, mapped thousands of square miles of unknown territory, experimented with dozens of construction materials, measured the movement of the Greenland icecap, and probed the depths of snow and permafrost in more than fifty different areas.

While the systematic assault on

problems of the Arctic is of comparatively recent origin, it should be noted that people have been living in the far north or the subarctic areas for many years. Already many engineering matters such as foundations, water supply, sewage disposal, heating, and ventilating have been worked out, at least to a satisfactory degree. They can be improved of course, and will be as engineers apply themselves to the entire problem.

But as one moves onto the permanent fields of snow and ice, a new world is opened. It is a strange in-between area with some of the characteristics of land but composed of the same element as the sea. It is to this area that the Corps of Engineers has directed its attention.

THE United States got its first taste of arctic construction during World War II when the Army built the Alcan Highway. Certain arctic phenomena were recorded but the matter was not pursued as a science.

Staging airfields were built across Canada and Alaska to facilitate the delivery of lend-lease combat planes to Russia. From this experience the Army Engineers learned many of the fundamental engineering requirements of arctic and subarctic construction.

As a result, the Army was able to define the problems of design, construction, operation, and maintenance in the far north. In 1944 the Corps of Engineers organized the Frost Effects Laboratory in Boston and in 1945 the Permafrost Division was established in St. Paul. Since 1950 the work has been expanded and reorganized and today is assigned to the Division of Troop Operations.

There now are six branches engaged in this work:

- The Snow, Ice and Permafrost Research Establishment at Wilmette, Illinois, with additional test stations at Houghton, Michigan, and on the Greenland icecap.
- The Arctic Construction and Frost Effects Laboratory at Boston, with 21 additional stations in Alaska.
- The Climatic Test Branch of the Engineer Research and Development Laboratories at Fort Belvoir, Virginia, with test station at Fort Churchill in Canada.
- The Army Map Service.
- The Waterways Experiment Station at Vicksburg, Mississippi.
- The First Engineer Arctic Task Force, Division of Troop Operations, Office of the Chief of Engineers, Washington, D. C., which coordinates and supplies logistical support for Engineer arctic research missions.

From a score of the nation's leading universities some fifty scientists in the fields of glaciology, geology, electronics, physics, and military and civil engineering have been employed to assist the Corps of Engineers.

Initially, a project engineer was assigned to each by the three agencies whose primary function is research and development—Engineer Research and Development Laboratories; the Snow, Ice, and Permafrost Research Establishment; and

Scientists use two types of penetrometers to measure snow conditions in the Arctic.

the Waterways Experiment Station. It was the project engineer's job to plan the attack on the various major problems by isolating measurements or factors which needed to be known in order to provide generalized solutions.

All in all, some eighteen major projects were undertaken in the three main fields of construction, power and communications.

CONSTRUCTION

PROBLEMS here included research in construction on permanently frozen soil or permafrost; on seasonally frozen ground; on snow; and on ice.

Work by the Corps of Engineers in building Ladd and Eielson Air Force Bases in Alaska, the installations at Thule and in Iceland, developed the basic technique for constructing permanent structures on permafrost. When barracks, hangars, shops, warehouses, and other structures are built on permafrost—that is, soil that remains frozen all year long—it becomes necessary to maintain the thermal balance of the soil. If the ground is thawed by heat generated within the buildings, the foundations are soon wrecked by the alternating freezing-thawing cycle.

Accordingly the Engineers have devised "air-conditioned" foundations which keep the soil cold and free from surface heat. The buildings are placed on "pads" of crushed rock and other materials that do not react readily to heat.

To support buildings in areas where the soil is frozen part of the year and slushy at other times, the Enginers have devised a method of placing piles butt end down to a depth below the thaw. Thus refreezing will not push the pile out of the ground as happens when they are installed with the small end down. Because the piles cannot be driven into solidly frozen ground, they must be placed in holes cut with high-pressure steam.

USING these and other techniques, the problems of construction where soil can be reached have been fairly satisfactorily—and fairly easily—met. But on the 700,000 square mile Greenland icecap where ice and snow are two miles deep, any structure is soon buried

This snow house was constructed from blocks excavated in a cut and cover tunnel which ends inside the structure.

by the icecap movement and by blowing snow.

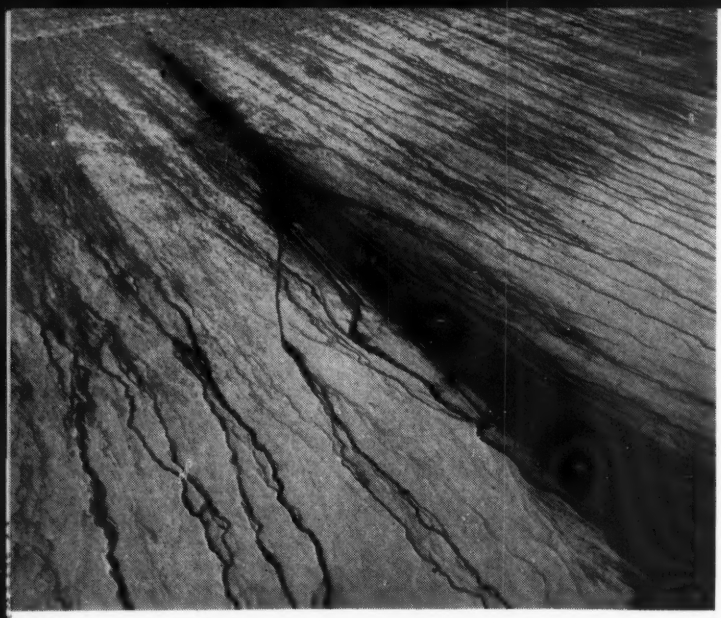
In this area the most interesting and most dramatic work of the Arcticologists has been accomplished. Experimental buildings were designed without any foundations at all; others were built of blocks of hard-packed snow cut from the icecap. To forestall the tendency of buildings to sink, some were built below the surface.

Probably the most unusual attempt to solve the problem of construction in the deep snow area was the erection by the Corps of Engineers for the Air Force of a submarine-type pressure hull structure. This is made of 18-foot diameter culvert pipe linked together in chambers, deliberately designed to be buried at the rate of several feet a year. The men move in and out through escape hatches which are lengthened as the building sinks.

As for the use of snow itself as a building material, experiments (known as Project 15) were carried out some distance inland on the permanent snow of the Greenland icecap. Obviously, if snow can be utilized for construction of living quarters, warehouses and other facilities, vast savings can be effected whenever it is necessary to establish bases or camps in permanently snow-covered areas. The costs of transporting construction materials overland in the arctic makes any other method of construction seem exorbitant by comparison.

Using modifications of the ancient Eskimo methods, snow houses were constructed both above and below the surface. In the above-ground method a "cut and cover" tunnel extending under the house was installed as an entrance. Instruments were used to record the rate at which the tunnels were closed by accumulating snow, as well as the magnitude of the forces which caused the closing.

ANOTHER phase of this project involved the digging of a 100-foot pit to provide thousands of samples for testing in an under-snow laboratory constructed on the spot. Basic measurements were made of density, permeability, viscosity, crushing strength, and other factors



A road over the ice cap at Thule is flanked by melt water streams which lace the surrounding area.

at various levels. Such observations will lead to establishment of sound design criteria for installations and will help eliminate many of the uncertainties that previously beset engineers. Project 15 was under direction of the Snow, Ice, and Permafrost Research Establishment.

Engineer scientists also studied the nature of ice—its characteristics, formation, strengths, and uses —and recorded the data in manual form for possible future application. It has been found that under some conditions, ice can be used for roads and airfields on frozen rivers and lakes.

POWER

THE PROBLEM of supplying power for remote installations in the Arctic is a matter of primary importance. In some remote bases, it costs $42 to supply a barrel of oil for heat and power. During wartime, the logistical problem would be even more acute.

Almost four years ago studies were begun toward the application of nuclear energy for heat and power. By 1953 the project was far enough along to allow coordination with the Atomic Energy Commission and a year later a prototype of a transportable nuclear power plant was built at Fort Belvoir, Virginia. Just recently a contract was let for commercial production.

Such a power plant, capable of turning out sufficient electricity for both light and power, provides a decided logistical advantage in that a single plane-load of nuclear fuel will operate the plant continuously for three or four years. In addition, experimental projects seek to employ solar radiation and wind as power sources in remote areas.

LINES OF COMMUNICATION

LINES of communication include not only roads and airfields but vehicles to go where roads cannot be built, and pipelines to supply fuel to remote installations. Road building problems in the Arctic involve not only building on snow and on permafrost, but also maintaining the roadbed where it extends from land areas onto the ice cap during the melt season.

Roads on snow with a land-mass

base are built in accordance with tested procedures set forth in Engineer manuals. Roads on the ice-cap can be made by compacting the snow, although drifts quickly cover old trails. Experiments are being made in compacting a soil layer over the snow to prevent this.

In constructing roads on permafrost, the problem of thermal balance remains largely the same as in standard road building. Existing techniques have been worked out so that either temporary or permanent roads can be built effectively on almost any land mass if special care is exercised in choice of materials and sites.

However, special problems arise in building roads from land areas onto the ice cap. The study of approach roads (Project 1) was assigned to the Engineer Research and Development Laboratories. The problem is generated when melting waters flow down the front of the ice cap to create myriads of small streams that cut into the solid ice.

These streams may vary from a foot wide and six inches deep to ten feet wide and four feet deep. The problem is most severe on the periphery of the ice cap—generally in the first two miles from the edge. Crossing these streams with tractors and sleds is difficult, slow, and hard on equipment.

At first it was believed that a road constructed of soil or rock darker than the surrounding ice cap would possess heat absorption qualities that would cause it to melt its way down into the snow. However an inspection of moraines —deposits of soil moved by ice— near the edge of the cap showed that they were actually higher than the adjacent ice. Further investigation showed that they were seldom elevated more than six inches. Thus it was found that even a thin cover of soil would provide sufficient insulation to more than compensate for greater heat absorption of its dark surface.

Experiments soon showed that, as a matter of fact, the problem was one of protecting the ice on the shoulders of such a road from being

A roadbed is laid at Thule, using pit run materials.

melted away so rapidly that the roadway would be dangerously high above the adjacent ice. A thin blanket of soil was therefore spread alongside the completed road to prevent melting away of the base.

Airfields, like roads, must be constructed on snow and on permafrost—but the airplane is not faced with the attendant problem of getting from the land area onto the ice cap.

The technique of building snow runways was worked out by Army Engineers as the result of efforts begun in World War II. Principally it involves leveling and compacting the snow. To achieve the density and strength required for aircraft, the snow is first pulverized and slightly melted with a heating tiller. The surface can be graded and filled if necessary. (See "Engineers Face the Arctic," August 1952 ARMY INFORMATION DIGEST.) One of the training projects in Exercise Snow Bird—held early this year in Alaska—was construction of an airfield on snow, from which planes took off and landed.

Ladd and Eielson fields in Alaska and the runways at Thule are perhaps the world's finest examples of airfield construction on permafrost. In such construction the engineer has the choice of leaving the thermal balance undisturbed, or of resorting to some measure that will remove the thermal balance problem entirely.

At Thule, to prevent any remote possibility of difficulty with the airstrip, the Army Engineers excavated to a depth of nine feet, then put the entire field on a six-foot "pad" of well graded sand or gravel. Because the pad is not subject to freezing or thawing, the field itself remains stable. This technique now is fairly standard.

Pipelines. When installing pipelines in the Arctic, special problems arise, since the comparative heat of the pipeline may itself thaw the permafrost. Then shifting occurs and the pipe snaps.

The problem was met by insulat-

A glaciologist is lowered into a crevasse on a bosun's chair. Light tactical bridging provides support.

ing underground pipe, or by placing it on supports some distance above the ground—a sort of elevated road line. The project now underway between Haines and Fairbanks, Alaska, is an example of this type installation.

Trafficability. The Engineer Research and Development Laboratories are engaged in development and design of motor vehicles, while the Waterways Experiment Station has the responsibility of determining trafficability conditions. As a result of their work, some standard vehicles have been redesigned the better to move themselves and to pull sledges; at the same time new vehicles such as the "snow buggy" and other conveyances with very large tires have been developed.

The Snow Trafficability study (Project 6) was carried out at the Transportation Arctic Group test station "Sierra," about 100 miles in from the edge of the ice cap.

Here the group studied surface snow conditions and their relation to mobility, using instruments previously developed for soil trafficability. As a result there has evolved a better design criteria for over-snow vehicles, including the setting up of limiting conditions for ground pressure, weight distribution, total weight, and similar factors.

In addition, several other aspects have come under intensive study. These include pathfinding, locating and bridging crevasses (closely allied to road building), trail marking, and engineering intelligence.

IN MANY respects navigating the Arctic is like steering a course through the ocean—there are no landmarks and storms frequently blot out the landscape. What is worse, the standard compass often is useless due to magnetic variations. Pathfinding therefore is a distinct problem.

A portable gyrocompass for vehicles is now in experimental use. A refinement of this basic principle now under study is the location-indicator, which tells the driver how far and in which direction he has moved from a given starting point.

A close-up view of one of the melt streams which abound on the ice-cap from July to September.

Experiments also have been made with an aircraft-type of guide beam which produces a loud buzz while the driver is on the trail and which grows fainter if he moves off it. Another method uses lights to indicate position.

Successful tests also have been made on experimental ice fog eliminators. Man-made fog normally results from discharge of exhaust gases when temperatures get below —24 degrees Fahrenheit. Such low visibility often "socks in" an airfield, seriously hampering aircraft operations. The new eliminators condense moisture from engine exhaust gas by cooling, then mix it with cold ambient air and finally reheat the mixture so that it can be discharged into the atmosphere fog free.

CREVASSES are a major hindrance in getting onto and off the ice cap. Some are 100 feet deep and may be 20 feet wide. Often they are covered by natural soft snow bridges—and the unwary traveler realizes he is on one, only when he crashes through. Besides detecting such breaks, it is important to establish their rate of movement, dimensions, mode of occurrence and finally, methods of bridging them.

Project 8 was devoted to a thorough study of crevasses. Such a program of study cannot be completed in one season but a great deal more was learned about these formations in the past summer than was accumulated in all the time since Greenland was explored. At present, the Engineers are experimenting with radar-like techniques to locate crevasses.

Once found, they must be bridged whenever it proves impossible to fill them or to build roadways around them. Light tactical bridging has been found practicable, and other experiments are being carried out with standard Engineer bridges.

Allied to the problem of crevasses and with building of roads is the rate of movement of the ice cap at its edge, and the annual accumulation of snow and subsequent melting. "Ramp Studies" (Project 10) was carried out by two groups who studied these phenomena in two separate, dissimilar areas.

VITAL to all military operations but especially so in areas like the Arctic, is a great variety of data on rainfall, snow depths, number and size of harbors, beach and soil conditions, location of caves and other topographical features. Engineer Intelligence, a part of Troop Operations, and the Army Map Service have compiled such information covering thousands of square miles and reduced it to maps. Many areas have thus been recorded for the first time.

An important Engineer development in this work is the "geodimeter" with which distances can be accurately measured by use of light flashes. This takes a fraction of the time previously required and is considered a boon to surveyors.

The conquest of the Arctic has progressed far and rapidly in the past year. But in a field so vast and complex and relatively new, there is an ever present need for continuing research and study if the demands of global strategy are to be satisfied.

Yakima points the way for military and civilians alike

When the Army Visits Your Town

Corporal Robert Gibson

PACK the area of any medium sized city with half as many soldiers as the town numbers normal residents and uncomfortable tensions may well be expected—unless both the city and the military plan for the impact.

The fact that during Exercise Apple Jack some 25,000 soldiers were crammed for two weeks into the area near Yakima, Washington, a town of 40,500 population, without causing any appreciable frictions is a good example of such planning.

As a result the soldiers feel that Yakima is "a good soldier town". Residents retain a warm appreciation of their summer guests and the feeling of having contributed materially to the national defense.

The entire experience was so mutually beneficial that Lieutenant General Willard G. Wyman, whose Sixth Army command takes in all the West Coast area, stated he hoped "some kind of a formula for the success of military-community relations in Yakima can be found and applied elsewhere".

CORPORAL ROBERT GIBSON is assigned to Public Information Office, Headquarters, Sixth Army.

Essentially the formula is simple —understanding on both sides and a determination to work harmoniously. But like anything else involving human relations, application of it depends upon planning, hard work, and improvisation where necessary.

Actually the way for Exercise Apple Jack was paved during the spring of 1954 when Exercise Hill Top was conducted for about 20,000 troops at the Yakima Firing Center.

The city itself was not entirely unaccustomed to service personnel, for the Firing Center maintains a small detachment there. But when in December 1953 it learned about Exercise Hill Top, the Chamber of Commerce feared the city would "drown in khaki".

PLANS for full cooperation with military authorities were set in motion by the community. Large welcome banners were strung over the main streets. In addition practically every one of the 532 business firms in town displayed welcome signs in their windows.

That the signs meant what they said was proved in practice. A

plea for help sent out by the lone USO worker in Yakima brought a response from 51 civic groups, mostly women's clubs. They gathered magazines and books. They baked hundreds of dozens of cookies and pastries. Books and food were available to soldiers in the field and in "Hilltop Lounge," a temporary club, and in the YMCA.

USO dances were organized for weekends. Families invited individual soldiers to their homes to share family meals and to attend church services.

Reduced rates were arranged for servicemen in uniform at theaters, auto races, the ball park, and Yakima's own special rodeo. In fact, a week after the annual main rodeo, a special show was staged in which more than fifty soldier cowpokes competed with regular rodeo hands.

Entertainment for soldiers in the field who could not manage to arrange passes for weekends was supplied by the city's little theater group which staged several events from the back of a truck.

NEWS of the maneuver was brought to the local citizens by a "war correspondent" representing the two newspapers. He accompanied the units in action and once was even "blown up" by a simulated booby trap and officially declared a casualty. As his editor said, "people for once could understand what the Army was doing with their tax dollars."

Army representatives, for their part, made every effort to forestall any unpleasantness, rather than cope with events after they happened. A temporary midnight curfew was enforced by the Military Police detachment, and any soldier who started blowing off steam was quickly whisked back to the Firing Center.

During the four weeks of the maneuver, more than 100,000 passes were granted. City officials always were notified in advance how many soldiers might be expected in town on any given occasion.

Officers from the Center and from the units on maneuver addressed civic luncheon groups, explaining the entire project and answering questions about the Army. A firepower demonstration was staged to acquaint civic leaders with the activity under way.

DURING Exercise Hill Top, soldiers on pass from the dusty expanses of the maneuver range showed their appreciation of the city's facilities by using up no less than a full year's normal supply of soap at the YMCA—boosted newspaper circulation by about 3,000—attended USO entertainments and dances by the hundreds—strained the telephone company facilities to the limit, especially on Mother's Day—and poured some quarter of a million dollars into the tills of the local merchants.

Yakima is truly a good soldier's town. As one citizen expressed it, "We wanted to show respect to the soldiers and they in turn showed us theirs. These are troubled times, and the least we can do is to prove to these men that we are appreciative of their sacrifices."

All was going well for the "invaders" until they came up against a surprising group of

Embattled Military Police

Major Harry B. Hambleton, Jr.

IT LOOKED good in the planning stage and at first it looked good in execution, too. The plan called for a paratroop company to land behind the defenders' lines, raid the prisoner of war cage, free and arm the prisoners, and then proceed to raise merry hell along the Main Supply Route.

Everything was going well with the plan initially. The invaders had complete surprise in their favor—until they in turn were completely surprised by a sudden counter attack that appeared to come from nowhere. In fact, by all conventional rules, there was nowhere from which an attack should have materialized.

Yet the Aggressor troops were pinned down, blocked, and isolated. When they discovered later that all their plans had been disrupted by a group of hard-hitting Military Police, the invaders were astonished As one officer remarked, "We never believed we'd be licked by a bunch of cops—we always thought the MP's directed traffic and enforced Off Limits signs. Next time we'll take the MP's into account when we plan any raiding parties".

This particular incident occurred during a maneuver and while it came as a surprise to the invaders, it was merely the proving ground for past planning and work done by the Military Police. It served

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Operating within enemy artillery range, MP's such as this one in Italy directed traffic moving to the front in World War II.

All traffic, military or civilian, is checked by Military Police in rear area defense. This scene occurred in Belgium during World War II.

Identification of personnel and close check on vehicle contents provides for rear area security, as in this maneuver on Okinawa.

notice to future maneuver forces—and potential real enemies as well—that Military Police battalions had developed to the fullest their capabilities for dealing with thrusts designed to disrupt communications and flow of supplies in rear areas.

Like the invading force in this incident, most soldiers today do not realize the combat potentialities of the Military Police. Even many commanders are not fully aware of the techniques that have been developed by MP planners.

ACTUALLY, the repulsing of attacks on supply areas is an extension of the job of keeping supplies flowing to the front. Cut off those vital movements of ammunition and food, or even disrupt them for a time, and the fighting units can be seriously crippled. Like cutting a nerve in a human body, an arm or the entire body may be paralyzed.

Stopping or even disrupting this vital movement of supplies has always been important. In older times cavalry raids were used, as in the Civil War. In World War II fast moving armored units strove to "get astride the enemy's supply lines". The use of paratroopers for vertical envelopment also was brought to a high point of perfection. The Russians, Yugoslavs, and Greeks achieved much the same effect by partisan or guerrilla action behind the German lines.

At one point the Germans invading Russia were forced to provide a security force estimated conservatively at no less than a hundred thousand men to protect their lines of supply. Maintaining such a special force is costly and keeps needed men from the fighting lines.

ECONOMY of force therefore dictates that defense against airborne or guerrilla infiltration and sabotage in rear areas be part of the mission of all forces comprising the defensive structure. This contemplates employment of units which are regarded primarily as support types.

In the Korean conflict, Military Police forces were used extensively in such capacity. Because they are highly trained in small-unit infantry tactics, and because they operate principally in the rear areas, the role of the Military Police becomes increasingly important in defensive and security plans.

Military police battalions were determined to be ideally suited for employment in rear area defense because of three major capabilities—fire power, communications, and mobility.

Traditionally, military police operate around-the-clock in performance of their normal duties. Thus a relatively formidable, well trained force armed with a variety of automatic weapons is readily available. This mass of automatic fire power is capable of being sustained for greater periods than most hostile forces because of resupply capabilities.

The MP's operate a communication net of vehicular mounted radios that constantly covers even remote sections of the rear areas—hence early warning by strategically located individuals or small units is readily possible. Timely intelligence reports concerning location, strength, and direction of hostile movement can be flashed by military police patrols to all elements of the command.

Having located the enemy and

warned their own units and other commands, the military police battalion can concentrate with remarkable swiftness by utilizing its own organic transportation. In this way a numerically superior foe may be outmaneuvered and defeated by quickly concentrating hard hitting, well trained, well armed forces at a decisive point.

FOR large scale attacks, either by airborne or guerrilla enemy troops, military police units may be employed as part of a larger force to perform traffic control. This is a crucially important function, since failure to provide efficient avenues of approach can result in loss of essential freedom of movement, immobilize troops and supplies, and generally jeopardize success of an operation. As part of a larger force, military police also handle prisoners of war and civilian refugees, perform motorized reconnaissance, provide communications—and fight as infantry when required.

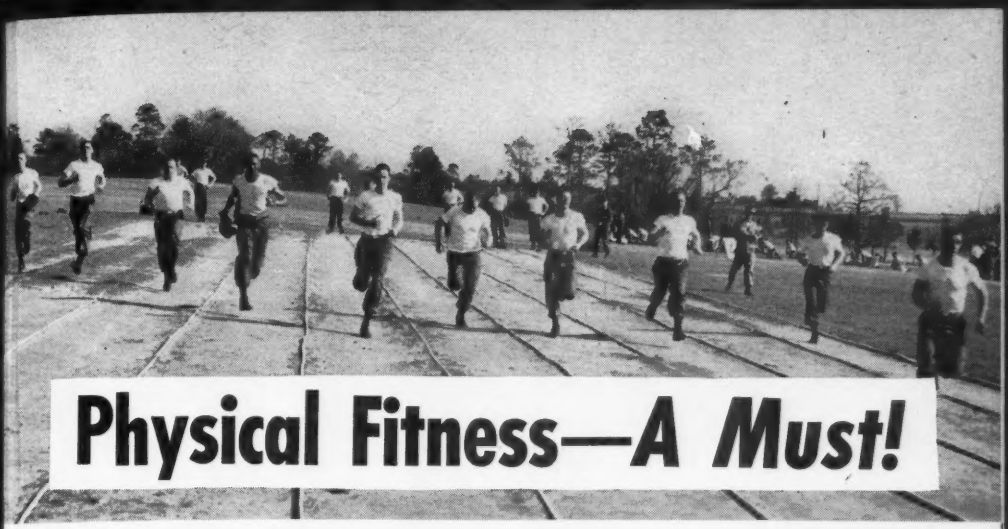
Techniques involved in such planning were perfected when more than 2,400 Military Police officers and enlisted men of the Seventh Army in Europe took to the field in army rear areas during Exercise PROVO in the spring of 1952. During this exercise the incident of the counter attack against the invading airborne troops took place.

IN ADDITION to actually fighting in case of attack, the military police organize rear areas to make the maximum use of indigenous personnel sympathetic to the friendly cause.

Under their direction, local police forces can be organized and employed to assist in carrying out defense measures. Acting in coordination with military government personnel, the military police organize and train local and regional police forces manned by screened local inhabitants. Such a valuable source of quasi-military manpower can police and control hostile populations in urban areas, assist in movement and control of refugees, and provide for security.

Military police battalions today are thus ideally suited for employment in all phases of the rear area defense, from tactical to strategic concepts. Every military policeman is trained to fight so that he can perform his combat role and contribute effectively to the entire plan of defense.

Military Police respond to an alert during maneuvers in Germany.



Physical Fitness—*A Must!*

Brigadier General Carl F. Fritzsche

NO COMMANDER would enter a battlefield with rusted, dilapidated equipment. To do so would be suicidal. The Army insists on superior care for the mechanical implements of war. It is imperative that equal emphasis be placed on the physical condition of our officers and men.

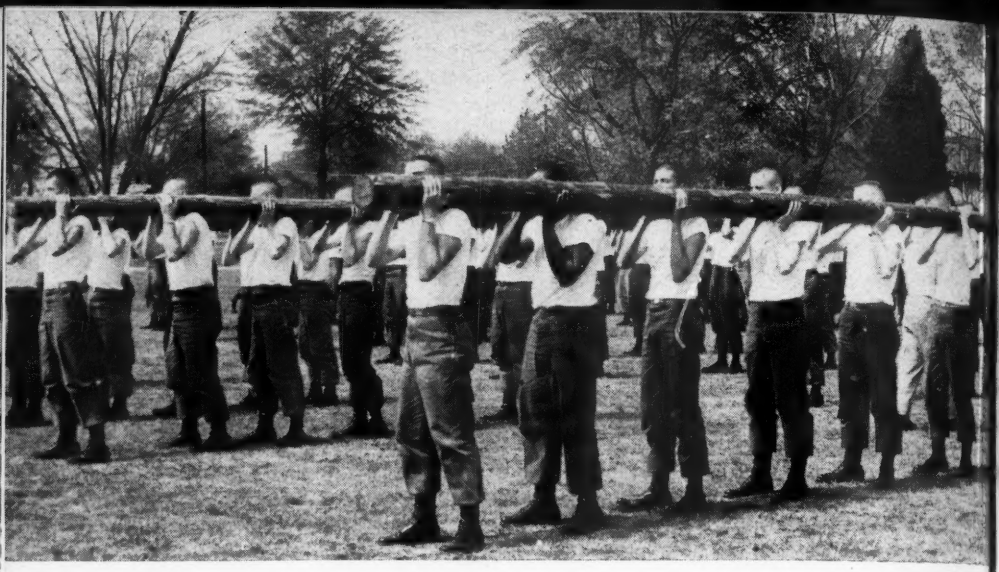
Men, like the tools of war, must be kept in a state of readiness. The individual officer or enlisted man who lets himself "go to pot" physically is as guilty of sabotage as some convicted fifth columnist. In this atomic era it can be assumed that in the event of hostilities there will be no "breather" in which men who have grown soft can be reconditioned.

The early days of the Korean conflict clearly indicated that few officers or men were physically combat-ready—both in the combat arms and technical services as well. The resulting casualties and decrease in efficiency left much to be desired.

COMBAT makes great demands on officers and men. It takes tremendous physical endurance to withstand fatigue, to function properly in spite of near-exhaustion. In Korea the Army faced an enemy skilled in ambush, infiltration, and guerilla tactics. Experience there proved beyond any doubt that mental and physical alertness is as imperative in the rear of a battlefield as at the front.

If this were evident in a conflict with conventional weapons, it will be doubly true in any conflict in which atomic weapons are employed. Leaders in both the combat and technical branches of the Army can expect to operate independently at great distances from "home base." These leaders must be men who can operate for extended periods under conditions unknown in the past. With good health and physical conditioning (as well as technical and tactical "know how") will come the confi-

BRIGADIER GENERAL CARL F. FRITZSCHE is Assistant Commandant, The Infantry School, Fort Benning, Georgia.



Practice with logs is a substitute for conditioning exercises and also provides for team play.

dence necessary for success.

For these reasons, The Infantry School takes Department of the Army Training Circular 27, which deals with physical training, very seriously. Its provisions are applied both to students and instructors.

Pertinent portions of this circular state: "The physical fitness test (ch. 17, FM 21–20) will be used as a standard method of evaluation of the physical condition and progress of the individual and the determination of his physical classification or profile. . . . This test will be administered twice a year to all personnel below the grade of colonel assigned to combat-type units and to all personnel below the age of 40 and/or below the grade of colonel at installations where facilities are or can be conveniently provided."

PHYSICAL training is an integral part of every course at the School. In the Basic Infantry Officer's Course, for example, students are given an accurately administered physical fitness test in their first few weeks. The physical condition of each student is evaluated. Where necessary, corrective exercises are prescribed. Overweight officers are given diets under supervision of medical officers. These students, like all others, are encouraged to keep in excellent condition.

The test itself is not designed to improve the physical fitness of the individual, but is the yardstick used to measure his existing physical condition. One student actually scored 492 points out of a possible 500. The members of one Basic Infantry Officer's Course averaged 324.38.

The nature of the work of some departments, like the Ranger and Airborne, keeps the assigned instructors in perpetual readiness for the physical fitness tests. Other departments whose work is less physically demanding use various methods of keeping their members in top form. One department, for example, conducts two compulsory 30-minute physical training periods weekly for all officers required to take the test.

The semiannual test is conducted by trained personnel of The Infantry School's Physical Training Committee, according to a set procedure. Groups of 40–50 instructors are scheduled for a specific day. Sufficient advance notice is given to provide a preparatory period of approximately ten weeks. This enables instructors to warm up before the test.

ON THE DAY of the tests, instructors are oriented on the nature of each phase. Before actual testing begins, a medical officer checks the individual's posture, frame, and weight. Those who may be overweight are advised to take the measures necessary to reduce under medical supervision.

The test is administered by trained officers and their enlisted assistants, all members of the School Physical Training Committee. Each scheduled event is demonstrated and any deviations from the approved method of performing each exercise that would result in a "no count" are carefully shown. This is repeated at each station.

Participants are then paired off, and each pair is accompanied by an officer or enlisted member of the Committee who acts as official score keeper.

Test cards containing the individual's scores are forwarded to the appropriate Department Director to assist him in evaluating each instructor's physical fitness. This data is noted on the individual's efficiency report, if necessary.

Should an individual fail to pass the test, his weaknesses are noted and corrective exercises are prescribed. After a suitable reconditioning period he retakes the test.

While this system may not meet the needs of all installations, it can materially assist commanders in establishing an adequate means of keeping personnel in good physical condition.

A class performs the body twist, one of the Army's "Daily Dozen."

PARAGRAPHS

from

The Pentagon and the Field

Nearly 130,000 Army Reservists will participate in the annual unit training program from 1 May until September 15. Approximately 25 divisions and some 2,200 separate reserve units will be in summer camp where personnel will receive 15 days training, including time allowed for travel to and from camp.

Reserve training also will be conducted on other levels. Those attending Army Reserve Schools will go on active duty for training with their schools to complete courses.

Rail and bus carriers in the United States have continued until 31 January 1956 the tax-exempt round-trip reduced fares for military personnel on official leave or pass.

As part of Operation Gyroscope, two Airborne Regimental Combat Teams—the 187th from Japan and the 508th at Fort Campbell, Kentucky—will be moved tactically in a 12,000-mile round trip airlift over the Pacific. The rotation movement will be supported by C–124 Globmaster Troop Carriers from Tactical Air Command's 18th Air Force. Dependent families authorized concurrent travel will be transported by the Military Sea Transportation Service.

A continuing program to stimulate purchase of United States Savings Bonds has been established by Department of the Army. For the remainder of calendar year 1955 a goal of at least 65 percent participation for civilian employees and military personnel has been set. Responsibilities of Army commanders and finance and accounting officers under the program are stated in paragraph 2b, SR 1–35–1, and paragraph 6e(2), AR 10–216. Student officers at The Finance School are receiving a two-hour training course in the program.

Training in jungle warfare and Army procedures in air movement was given to nearly 1,100 troops from the 11th Airborne Division who took part in Exercise Jungle Jim in the Canal Zone last month. Aircraft of the Air Force Tactical Air Command transported the troops from Fort Campbell to the Panama Canal Zone and return. Participating troops were organized into a battalion combat team consisting of an Airborne Infantry battalion, an Airborne Field Artillery howitzer battery, engineer platoon and a detachment of a regimental medical company.

With the recent redesignation of the Counter Intelligence School at Fort Holabird, Maryland, as The Army Intelligence School, Department of the Army General Staff responsibility for supervision of intelligence activities at the School will remain with the Assistant Chief of Staff, G–2. The School, however, will perform certain functions for the Continental Army Command, headquarters of which is at Fort Monroe, Virginia.

The new personnel record system and military occupational structure which will become operative in the active Army on 1 July will be extended to the Army Reserve and National Guard in the fall of this year.

A new department, the Airborne-Army Aviation, has been established at The Infantry School, combining the former Airborne Department now redesignated as the Airborne School, and the newly organized Air Mobility Group. The department is responsible for preparation and presentation of resident technical airborne instruction; supervision of the development of new army air doctrine and procedures; preparation of nonresident instructional material; testing and evaluation of Army air operations; as well as preparation and revision of manuals, ATP's, training circulars, film scenarios and literature related to air mobility operations.

Development of 1,000 Wherry Act rental units at Fort Carson, Colorado, has been approved. The units will include one, two, and three bedroom type apartments. Development of 100 such units at Fort Leavenworth, Kansas, is also planned.

The serviceman in the field may soon be having breakfast of orange juice made from orange crystals, before taking on a meal of more than ordinarily palatable eggs dehydrated by a new process and flavored with newly developed synthetic black pepper.

The Quartermaster Food and Container Institute for the Armed Forces, Chicago, Illinois, currently is experimenting with the crystals as a possible substitute for concentrated orange juice. They take up less space and weigh less than the concentrate. The Institute also has rated the synthetic—now undergoing field tests at Fort Knox, Kentucky—as acceptable as natural black pepper.

As for the eggs, a successful development of glucose-free dehydrated whole eggs is a complement of the new Armed Forces standard B ration designed for group feeding where refrigeration is not available. The process is an improvement over the World War II dehydration method, since removal of the glucose eliminates a principal cause of discoloration and off-flavor.

Retiring members of the Army may authorize class E allotments for commercial life insurance and class D and N allotments. DD form 234 (Allotment Authorization) will be prepared by the retired member authorizing deductions in these classes. Enlisted members will submit authorizations to unit commanders or personnel officers for transmittal to the finance officer making the last payment of active duty pay. Officers may submit authorizations either through the personnel officer or direct to the finance officer making the last payment of active duty pay. Action to be taken by finance officers is prescribed in AR 35–1921.

The Department of the Army has prepared a standard type manning table for units engaged in such personnel processing activities as reception, transfer, reassignment, and oversea replacement. This type of table of distribution is currently applicable to 13 personnel centers using over 7,000 military and civilian personnel. By standardizing the mission, organization, and staffing of these units the Department of Army is able to improve the quality of personnel processing while reducing manpower costs by nearly 10 percent.

First of a large number to be used by the Army, a Sikorsky H–34 helicopter has been delivered to the Army Aviation School, Camp Rucker, Alabama. A four-bladed single main rotor aircraft, the H–34 is powered by a Lycoming-built Wright R–1820 engine of 1,425 horsepower and can carry from 12 to 14 fully equipped troops or 3,000 pounds of cargo. As more units are delivered, training of H–34 pilots eventually will be conducted at Fort Sill, Oklahoma.

Under the Army's Scientific and Professional program almost 5,000 personnel previously trained in colleges and universities are now being utilized in Research and Development and related activities throughout the Army.

At a three-day national strategy seminar sponsored in late March at the Army War College, Carlisle Barracks, Pennsylvania, about 50 nationally prominent citizens and high ranking Army officers heard four formal addresses and took part in committee discussions of current problems of national strategy. At a final plenary session, major conclusions of the civilian-officer committees were presented. Major General Clyde D. Eddleman, newly designated Commandant of the College, flew from his post in Germany, where he commanded the 4th Infantry Division, to participate.

Water-borne sewage may soon be sterilized by gamma-radiation, thus providing another beneficial use for the deadly radiation from active substances. Research in this field was conducted by the Corps of Engineers' Research and Development Laboratories, Fort Belvoir, Virginia, in conjunction with the Oak Ridge National Laboratory at Oak Ridge, Tennessee. The treatment, it was found, will not activate or leave residual radiation in the treated liquids. Investigation also showed that gamma rays can be used to sterilize certain drugs and antibiotics which are harmfully affected by heat, to preserve meats and other foodstuffs, and to decrease bacteria in swimming pools without using chlorine.

A single design of men's low-quarter dress shoes has been standardized for all the Armed Services and will eventually replace the different designs now used, the Department of Defense has announced. The new design will reduce the number of sizes now carried in the Army's supply system from 235 to 113 by eliminating the alternate widths now employed. The lasts were developed by the Army Quartermaster Corps in collaboration with the Army Medical Service, the Navy, Air Force, and Marine Corps.

Official Notes

CAREER INCENTIVE ACT OF 1955. Department of the Army Bulletin 4 details provisions of the Career Incentive Act of 1955 (Public Law 20—84th Congress)—"an Act to provide incentives for members of the uniformed services by increasing certain pay and allowances." The Bulletin contains the amendments to the Career Compensation Act of 1949 as contained in the new Act, and reproduces in full the new tables of pay and incentive pay for hazardous duty.

ARMY MAINTENANCE BOARD. AR 15–470 prescribes the mission, responsibilities, organization, operation, and support of the Army Maintenance Board, which will correlate the relation between the maintenance mission required to be performed by using units and the parts, tools, and technical publications required to be supplied to them; and the relation between organizational maintenance, technical service field maintenance, and parts supply policies.

OLYMPICS. Public Law 11—84th Congress authorizes personnel of the Armed Forces to train for, attend and participate in the Second Pan-American Games, the Seventh Olympic Winter Games, Games of the XVI Olympiad, future Pan-American and Olympic Games and certain other international amateur sports competitions, and for other purposes.

AR 28–20 prescribes rules for triathlon competition as an integral part of the Army sports program. Triathlon competition consists of pistol shooting, distance running, and swimming.

RESERVE POLICIES. AR 135–5 governs release of reserve component personnel rosters and use of military title in connection with commercial enterprises. It also prescribes civil status of members of the reserve components.

ALLOWANCE WAIVERS. Department of the Army Circular 135.5 stipulates that a member of a Reserve Component entering upon active duty or duty for training shall execute a certificate indicating whether he is receiving a pension, retired pay, disability allowance, disability compensation, or retirement pay from the Government and whether he waives such benefits to receive active duty or active duty for training pay.

ARMY LANGUAGE SCHOOL. AR 601–241 prescribes qualifications and procedures for enlistment and reenlistment of men in the Regular Army for language training at the Army Language School. The option applies to those with or without prior service from civilian life and to men reenlisting from within the service. Languages offered, according to Circular 601–4, are Japanese, Russian, Korean, Chinese-Mandarin, Czech, Hungarian, Polish.

ALLOTMENT MAILING DATE. Department of the Army Circular 35–22 provides that all Class E and Q allotment checks will be released on the last working day of the month. Disbursing officers are cautioned to comply with provisions of paragraph 13, AR 35–1900 in cases of discontinuances.

TROOP PROGRAM SEQUENCE NUMBER. AR 330–361 details the use of the troop program sequence number for mechanically presenting actual, current authorized, planned and mobilization strengths of the Active Army, Army Reserve and National Guard of the United States in organizational sequence. Uniform branch codes and type of unit designations for TOE organizations are established. Classification by activity of TD organizations and detachments for training, transient and patient personnel are provided.

SUPPORT RESPONSIBILITIES. Department of the Army Circular 616–1 establishes procedures for reporting personnel spaces and supporting dollar resources to be transferred from continental Army commanders to heads of administrative and technical services effective 1 July under provisions of AR 10–50.

PACKAGED RATIONS. Department of the Army Circular 30–1 specifies that until such times as current stocks are rotated within the life span of the items, all Army operated messes in the Continental United States utilizing the field ration will serve food components of two Rations, Combat, Individual, each month for each person being subsisted. Excepted are nonfixed hospital messes, troop messes feeding hospital patients, messes feeding personnel being processed through separation centers and ports of embarkation, and prisoner messes in United States Disciplinary Barracks.

TRAINING AMMUNITION. AR 710–1300–1 provides a system for distributing ammunition for training purposes at class I and II installations and Reserve components in Continental United States, and serves as a guide to oversea commanders in establishing similar systems.

OFFICER ASSIGNMENT. AR 614–125 prescribes information to be forwarded to Department of Army upon which to base assignment of officer personnel returning from an oversea command for permanent change of station.

OVERSEA VEHICLE REGISTRATION. AR 643–25 provides military authorities with a uniform means of registering motor vehicles owned privately by military personnel or civilians employed by or for the Armed Forces overseas, regardless of the source of purchase.

FLAGS AND GUIDONS. SR 840–10–1 clarifies the basis of issue for distinguishing type flags and automobile plates for use by officials of the Department of Defense and Department of the Army.

REENLISTMENT PROGRAM. AR 601–280 provides a uniform intra-Army reenlistment program within the Army Establishment. Major commanders will conduct a comprehensive program for all organizations under their jurisdiction and will direct that subordinate commanders organize and conduct such a reenlistment program for each unit under their respective jurisdictions.

CLASSIFICATION OF INSTALLATIONS. AR 10–50 sets forth the authority, policies, and responsibilities for special command relationships incident to the accomplishment of the Continental United States mission of the Army. Effective 1 July, installations are classified as I, II or III and activities as Class I or II. A Class I installation is one which is under command of a continental Army or the Military District of Washington. A Class II installation is under command of a staff agency of the Department of the Army and is primarily logistical in nature. A Class III installation is under command of a staff agency and has both logistical and other types activities located thereon. Activities follow the same classifications in categories I and II.

SPECIALISTS AND PROFESSIONAL PERSONNEL. AR 611–210 and 611–211 provide respectively for selection and classification of specialists and of scientific and professional personnel.

AR 611–210 provides procedures for selection, classification, assignment, and utilization of enlisted personnel having occupational qualifications of special value to the Army. Specialists are defined as soldiers who possess civilian qualifications and technical skills which have a Military Occupational Specialty (MOS) which requires high technical skills, involves long-term training, and for which the Army has a need.

AR 611–211 provides for identification, classification, requisitioning, assignment, and utilization of both prior and non-prior service personnel who are qualified to perform scientific and professional level duties in such activities as research and development, instruction and related work of a professional or scientific nature. Special provisions insure that qualified enlisted personnel are utilized in military duties related to their training and experience to the greatest extent possible.

COPYRIGHT CLEARANCES. AR 28–168 provides that a royalty clearance will be obtained prior to production of any copyrighted play or other material for stage presentation, when it is produced by any activity of an installation.

READJUSTMENT ORIENTATION. AR 635–15 establishes a standardized program to assist personnel being released from active duty in making the transition from military to civilian life. Department of the Army Circular 635–10 states that a film entitled "Going Back to Civilian Life" will be shown to all personnel being released from active duty in conjunction with the orientation program prescribed in AR 635–15.

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New Aids for Chemical Corps

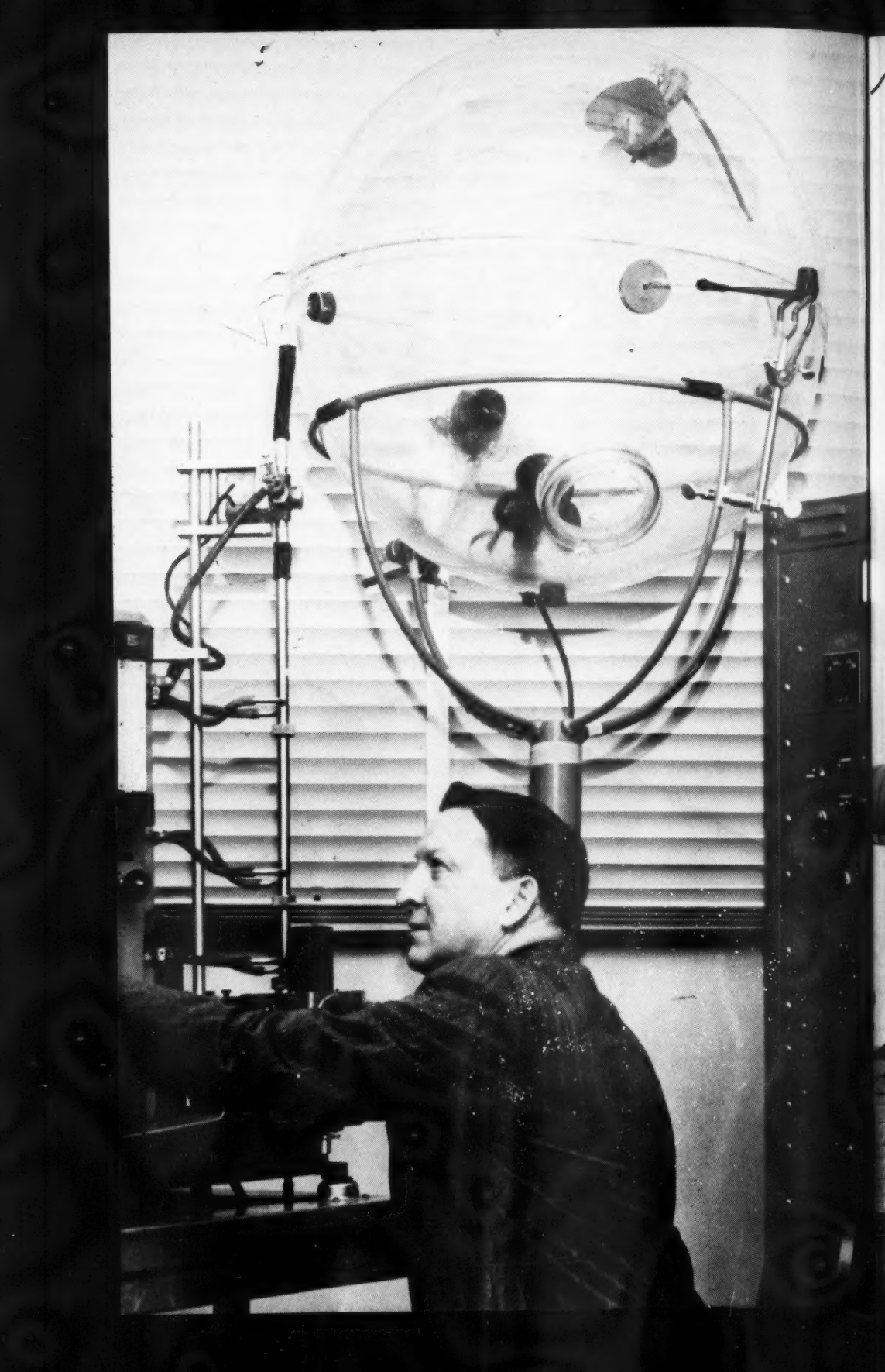
MILLIONS of tiny particles dancing in a beam of sunlight may be a delight to the artistic eye but to the military they may provide a clue to an enemy biological warfare attack.

Counting these microscopic airborne particles of dust, moisture, and germs has long been an important but difficult job. Studying actions of various toxic materials under varying climatic conditions, and the treatment of casualties under the same conditions, also is important militarily.

Attacking these twin problems, an Army Chemical Corps engineer has developed the aerosoloscope, an electronic instrument to measure and count the tiny particles; and the Chemical Corps Medical Laboratories are making their own weather to study materials under conditions of wind, fog, rain, snow, and heat.

The electronic instrument uses much the same reflective qualities of a beam of sunlight to sort out, measure, and count airborne particles—some as small as one forty-millionth of an inch—at the rate of 100 per second. It was developed by Nelson E. Alexander at Camp Detrick, Maryland, after more than six years of intensive study. The instrument will also be of value in studying air contamination in cities and industrial plants.

AT THE Army Chemical Center, Maryland, a recently completed climatic chamber is making possible closer study of the effects of weather on toxic materials. In a series of chambers for hot or cold, wet or dry conditions, toxic materials can be released at pre-selected temperature, humidity, wind direction, and speed. This eliminates much costly outdoor climatic field testing by expeditions.

The effect of the toxic agent—or its simulant—is tested on a subject at rest or in motion on a set of treadmills. Physiological effects of various antidotes and procedures of treatment under given conditions also can be studied.

(For picture of Aerosoloscope, see back cover.)